REMARKS

This responds to the Final Office Action mailed on May 18, 2006.

Claim 1-24 are pending in this application.

§102 Rejection of the Claims

Claim 24 was rejected under 35 U.S.C. § 102(b) for anticipation by Dockemeyer, Jr. et al. (US 2004/0214540). This rejection is respectfully traversed, as the reference does not disclose the elements described in the detailed description that correspond to the means elements of claim 24.

The Response to Arguments section of the Final Office Action indicates that Filters 44, 48, 64 and 69 (Fig. 2) are used in detecting interference. This is respectfully traversed. Signal quality monitor 21 monitors signal quality in each channel as indicated in Paragraph [0014] in Col. 2. The elements indicated as detecting interference are actually part of the tuner 18 used for tuning to a channel. Element 44 is a narrow band filter and 48 is an analog-to-digital filter for received satellite signals. Element 64 is a narrow band filter and 68 is an analog-to-digital filter for terrestrial signals. These elements are not described as used in detecting interference as stated in the Final Office Action. There is no discussion in Dockemeyer, Jr. et al., regarding the methods employed by quality monitor 21 for monitoring signal quality, other than the use of bit error rates and/or signal-to-noise ratio, and hence, there is no teaching in Dockemeyer, Jr. et al., of the claim elements in claim 24.

The Final Office Action also refers to FIG. 4 as describing sampling readings in step 108. As indicated above, the signal quality is received from quality monitor 21, which is separate from tuner 18, and thus is separate from the filters. Further, the text describing FIG. 4, basically sets a loop that adjusts gain based on bit error rate and/or signal-to-noise ratios. The above filter elements are not described as using any form of sampling.

Additionally, the Final Office Action characterizes Dockemeyer, Jr. et al., as including multiple variable gain circuits. It should be noted that each of the circuits is used for an individual channel. One channel for terrestrial transmissions and one for satellite transmissions. There is no concept described in Dockemeyer, Jr. et al., related to the use of multiple filters for one channel as claim 24, when properly interpreted, includes.

The Final Office Action indicates that narrow bandwidth filters in step 108 "is taking measurement from the readings which is sampling the detected power readings." This statement does not address sampling using multiple narrow band filters across a channel. Thus, the reference does not teach, disclose or suggest the first element of claim 24 as properly interpreted.

As stated in a prior response, claim 24 is written in means plus function format. The means elements should be interpreted as the structures and their equivalents that are described in the specification as performing the functions recited. The first element of claim 24 is "means for detecting interference". This element is summarized at least in paragraph 28, and as shown in FIG. 2 starting at 225, and in FIG.s 3A-3D, where multiple filters are set to fractions of a channel and the total power received by each filter is compared to thresholds. In one embodiment, three filters are each set to $1/3^{rd}$ of the bandwidth of a channel. The Office Action indicates that Dockenmeyer, Jr. et al., teaches means for detecting interference 52 and 50 or 70 (Fig. 2). Elements 50 and 70 are referred to as narrow band detectors, and element 52 is a wide band detector. There is no discussion of the use of multiple filters set to cover a channel, as correspond to the claimed means. Thus, Dockenmeyer, Jr. et al., does not describe the first element as properly interpreted.

The second element of claim 24 is "means for adjusting receiver gain based on narrowband sampling of the noise floor." This element is described with respect to FIG. 4, and corresponds to a narrow band filter (100Hz in one embodiment) being swept across a receiving band to search for the minimum Rx power. Paragraph 27 provides a summary of this element. Dockenmeyer, Jr. et al., is described in the Office Action as showing narrowband sampling of the noise floor by 50 or 70. The noise floor is equated to interference by the Office Action. While Dockenmeyer, Jr. et al., describes narrow band power detectors 50 and 70, there is no discussion of sweeping across a receiving band. Both of the narrow power band detectors 50 and 70 of Dockenmeyer, Jr. et al., are described as simply receiving the output of variable gain amplifiers which are processed by analog to digital filters.

Applicant has reviewed Dockenmeyer, Jr. et al., and has not found any discussion of either of the means elements of claim 24. There was no combination of filters to detect

interference, nor any sweeping or sampling by a narrowband filter as claimed. Thus, claim 24 is believed to clearly distinguish the reference, and the rejection should be withdrawn.

§103 Rejection of the Claims

Claims 1-3, 6, 8, 13, 17 and 20-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dockemeyer, Jr. et al. (US 2004/0214540) in view of Haub et al. (US 2005/0026564). This rejection is respectfully traversed, as the combination of the references does not teach or suggest each and every element of the claimed invention.

The Response to Arguments section of the Final Office Action indicates that Haub et al. teaches the filters to have a dynamic range which can filter a narrow bandwidth in 0047, and also referring to section 0036. This response does not address the basic lack of teaching of sampling in Dockemeyer, Jr. et al., which is again set forth below. Further, said paragraph 0047 in Haub et al., simply refers to reducing the dynamic range of a receiver if there is no need for the full dynamic range. 0036 describes using a bank of filters for to provide a receive spectrum to a Fast Fourier Transform (FFT). Further, the spectrum is defined as across and outside of the receive band. Thus, it does not teach using multiple filters for the receive band itself. It is used to identify the frequency of interference, where claim 1 is for calibrating gain of multiple receivers as a function of the minimum received power across the receive band.

As indicated in the previous response, Dockenmeyer, Jr. et al., is cited as teaching sampling the receive band with receiver filters 44 and 64 in FIG. 2. However, the sampling performed in claim 1 is done with respect to receiving filters that are set to narrow bandwidths, and then used to obtain samples across substantially all of the receive band. This is very different from Dockenmeyer, Jr. et al., which does not sample, but essentially reads "the narrow band detected power signal strength for both of the primary and secondary signals." Paragraph 23. There is no concept of sampling across all of the receive band with narrow bandwidth filters as claimed.

Dockenmeyer, Jr. et al., was also cited as describing measuring received power at each sample at 108 (Fig. 4). This is respectfully traversed. Element 108 appears to "read signal quality" at one frequency, not at each sample corresponding to samples across substantially all of

the receive band as claimed. Thus, Dockenmeyer, Jr. et al., lacks at least two elements it was stated as describing. The rejection should be withdrawn.

The Office Action further indicates that Haub et al., describes setting receiver filters 320 and 323 to a narrow bandwidth in paragraphs 30 and 47. This assertion is respectfully traversed. No discussion of setting receiver filters to a narrow bandwidth was found. The filters identified are analog filter block 320 and digital filter block 323. No discussion in paragraphs 30 or 47 was found regarding setting them to narrow bandwidth. Paragraph 30 merely lists them in the context of describing gain control and current control. Paragraph 47 describes reducing the dynamic range of receiver components because of a reduced signal level using current control. This does not appear to be at all related to setting a filter to a narrow bandwidth for sampling across a receive band as claimed. Since several elements of the claims are not taught or suggested by the references alone or combined, a proper prima facie case of obviousness has not been established, and the rejection should be withdrawn.

With respect to claim 2, the Office Action appears to cite a narrowband definition that states: "In CDMA radio, using less than 5 MHZ of bandwidth in each direction." Claim 2 receives that the narrow bandwidth is approximately 100KHz or less. This is an order of magnitude less than that stated in the definition cited. Further, there is no suggestion for combining this newly cited reference with the other references. Thus, a prima facie case of obviousness has not been established for several reasons, and the rejection should be withdrawn.

Regarding claim 3, the Office Action states that it is "possible and obvious that wherein the number of samples per receiver filter can be set between approximately 5 and 10 across a receive band of approximately 25 MHz (Section 0030 and 0047)." These sections or paragraphs have been reviewed as indicated above, and appear to have nothing to do with sampling, much less suggesting the number of samples across a receive band. Thus, the rejection should be withdrawn.

Dependent claims 2-8 are believed patentable for at least the same reasons as claim 1.

Independent claim 17 describes using multiple filter receivers to cover the bandwidth of a channel, as described in the combination of the first two elements. The Office Action indicates that this is described in Dockenmeyer, Jr. et al., at paragraph 23. This assertion is respectfully traversed. Paragraph 23 appears to "read wide band detected power signal strength of the

satellite (primary) signal." Applicant fails to see how this teaches the claimed method of merging receiver filters to cover the bandwidth of a channel. As this element is lacking from Dockenmeyer, Jr. et al., a proper prima facie case of obviousness has not been established, and the rejection should be withdrawn.

Further, claim 17 includes "increasing the receiver attenuation to protect the receiver from operating in the non-linear region and prevent an ADC (analog to digital converter) from saturation when a strong interfering signal is present." The Final Office Action indicates that Dockemeyer, Jr. et al. increases receiver attenuation at 40 and 60 in Fig. 2) from saturation when a strong interfering signal is present (fig. 4). The Final Office Action also asserts that the element may be found in Fig. 2 and 1 as "there has to be some sort of D/A converter for it to go into the Digital Demodulator 20 (Fig. 1) and then the signal later on gets converted back to analog 26 (Fig. 1)" This statement does not appear to relate to increasing receiver attenuation as claimed.

Dependent claims 18-22 are believed patentable for at least the same reasons as claim 17.

Claims 4, 5 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dockemeyer, Jr. et al. (US 2004/0214540) in view of Haub et al. (US 2005/0026564) and in further view of Vepsalainen et al. (US 2004/0176055). These claims are believed patentable for at least the same reasons as the claims from which they depend.

Claims 7 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dockemeyer, Jr. et al. (US 2004/0214540) in view of Haub et al. (US 2005/0026564) and in further view of Usui et al. (US 5,818,827). These claims are believed patentable for at least the same reasons as the claims from which they depend.

Claims 9-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Haub et al. (US 2005/0026564). This rejection is respectfully traversed, as Haub et al., does not show each and every element.

The Response to Arguments section of the Final Office Action indicates that the "allegedly inherent characteristic is provided with a technical reasoning. Since the narrowband

detected power is read in step 106 (Fig. 2), then it is sampled and measured in step 108 (Fig. 2) and then can be adjusted it is obvious that the micro-controller can adjust the narrow bandwidth." It is submitted that Dockemeyer, JR. et al., is adjusting gain, not the bandwidth of the filter. Thus, the alleged inherent characteristic does not necessarily flow from the teachings.

Claim 9 recites that a micro-controller adjusts a receiver filter to sample a narrow bandwidth across a receive band and adjusts a gain of the receiver as a function of power detected. The Office Action indicates that Haub et al., fails to teach clearly about a micro-controller that adjusts the receiver filter to sample a narrow bandwidth. It further indicates that it would have been obvious to do so because "there is implied of some sort of narrowband filtering is done because the receiver handles both wideband and narrowband communications and the filters can be adjusted (Section 0030 and 0047). These sections have been discussed above, and no such teaching was found. Further, Haub et al., does not describe sampling across a receive band as claimed.

The Office Action indicates that "Haub et al. fails to teach clearly about a micro-controller that adjusts the receiver filter to sample a narrow bandwidth", but by use of the language "there is implied of some sort..." appears to be invoking some form of inherency. The Office Action has not established a *prima facie* case of inherency because, as recited in MPEP § 2112, "In relying upon the theory of inherency, the examiner must provide basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art," citing Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

The Office Action only argued that some sort of narrowband filtering is done because the receiver handles both wideband and narrowband communications. Thus, the Office Action does not even assert that the allegedly inherent characteristic is necessary, let alone provide a basis in fact and/or technical reasoning. Applicant respectfully submits that handling both wideband and narrowband communications does not mean that the receiver filter is adjusted to sample a narrow bandwidth across a receive band as claimed. In fact, narrowing and sampling of a band implies if anything, that the narrowing is done to a range narrower than the band itself in order that it can be used to sample across the band. The allegedly inherent characteristic does not necessarily

flow from the teachings of Haub et al. In fact, claim 9 recites a very different structure and function than that described in Haub et al. As such, the rejection should be withdrawn.

Claims 10-12 are believed patentable for at least the same reasons as claim 9, from which they depend.

Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Haub et al. (US 2005/0026564) in view of Lindell et al. (US 6,978,125). This claim is believed patentable for at least the same reasons as the claim from which it depends.

Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Haub et al. (US 2005/0026564) in view of Lindell et al. (US 6,978,125) as applied to claims 9 and 14 above, and further in view of Cho (US 2003/0073423). This claim is believed patentable for at least the same reasons as the claim from which it depends.

Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Haub et al. (US 2005/0026564) in view of Seo (US 6,738,367). This claim is believed patentable for at least the same reasons as the claim from which it depends.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6972 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

BING LEUNG CHEUNG ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 373-6972

Date 7-18-2006

By _____
Bradley A. Forrest
Reg. No. 30,837

Date of Deposit: July 18, 2006
This paper or fee is being filed on the date indicated above using the USPTO's electronic filing system EFS-Web, and is addressed to: The Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

CANDIS BUENDING _____

Name

Signature